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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 300
MCLEAN, VA 22102

EXAMINER	
KALLIS, RUSSELL	
ART UNIT	**PAPER NUMBER**
1638	

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,280	HERBERS ET AL.	
	Examiner	Art Unit	
	Russell Kallis	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *3-5,17 and 18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 6-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/11/2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/11/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group II, claims 1-2 and 6-16 in the reply filed on 10/13/2004 is acknowledged. The traversal is on the ground(s) that the selection of only one special technical feature is improper because all claims include at least two technical features. This is not found persuasive because the claims recite in the alternative that one or the other can be claimed, i.e. a HPPD or an anti-HGD gene sequence. The expression "special technical features" is defined in Rule 13.2 as meaning those technical features that define a contribution which each of the inventions, considered as a whole, make over the prior art. The determination is made on the content of the claims as interpreted in light of the description and drawings (if any); and since the special technical feature of an expression cassette comprising a HPPD gene was known in the art, unity of invention is lacking. Further, Applicant has not responded to the Examiner's analysis that the HPPD gene and the nucleic acid sequence capable of inhibiting an HGD gene (anti-HGD) do not share a common core structure. With respect to applicant's remarks that "no disunity was declared during examination of the PCT application by the International Preliminary Examining Authority. This establishes a *prima facie* case for the presence of unity of invention. Although the presumption is rebuttable, no rebuttal is provided". The presumption of unity was rebutted in the restriction mailed 8/27/2004. Moreover, regarding the failure of the International search authority to indicate a lack of unity, the Examiner notes that he is not bound by the decision of another Examiner, and contrary to Applicant's assertions, the instant lack of unity complies with PCT regulations.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-18 are pending. Claims 3-5 and 17-18 are withdrawn. Claims 1-2 and 6-16 of Group II are examined to the extent they read upon an expression cassette encompassing an anti-HGD nucleic acid sequence.

Specification

The abstract of the disclosure is objected to because it is not a complete sentence and thus, is grammatically incorrect. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. (See page 14, line 41 of the specification)

The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Expression cassettes and transgenic plants comprising an antisense homogentisate dioxygenase nucleic acid sequence.

The use of the trademark LI-COR (on page 14, line 29), pBLUESCRIPT (on page 15, line 1), NUCLEOSPIN (on page 16, line 31), and PCR-SCRIPT (on page 18, line 1 and line 42) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

Claim Objections

Claim 1, 8 and 9 are objected to because of the following informalities: The claims recite non-elected subject matter i.e. a coding sequence for an HPPD gene. Appropriate correction is required.

Claims 6-7 objected to because of the following informalities: the claims recite dependencies to non-elected claims. Appropriate correction is required.

Claims 6-7 and 10-16 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and/or cannot depend from another multiple dependent claim or depend from a multiple dependent claim that is dependent from a multiple dependent claim. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-2 and 6-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are broadly drawn to a vector encompassing an expression cassette comprising an anti-HGD homogentisate dioxygenase nucleic acid sequence operably linked to a regulatory nucleic acid sequece, a microorganism comprising a vector encompassing an expression cassette comprising an antisense homogentisate dioxygenase nucleic acid sequence having an HGD motif, plants transformed with either the said vector or the said microorganism comprising the said vector; and a method of transformation using said HGD nucleic acid sequence.

Applicant describes a recombinant vector encompassing an expression cassette comprising a antisense fragment of 575 bp (SEQ ID NO: 1) isolated from *Brassica napus* using *Arabidopsis* specific HGD primers linked to either a 35S or plant specific promoter and an OCS terminator; and incorporates through reference polynucleotide sequences encoding homogentisate dioxygenase (HGD) enzymes from human, mouse and *Arabidopsis* on page 15 lines 41-44.

Applicant does not describe an anti-HGD sequence other than the sequence that is complementary to SEQ ID NO: 1 or an HGD sequence motif in accordance with SEQ ID NO: 1.

The Federal Circuit has recently clarified the application of the written description requirement to inventions in the field of biotechnology. The court stated that, "A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to members of the genus, which features constitute a substantial portion of the genus." *See University of California v. Eli Lilly and Co.*, 119 F.3d 1559; 43 USPQ2d 1398, 1406 (Fed. Cir. 1997).

Applicants fail to describe a representative number of anti-HGD homogentisate dioxygenase nucleic acid sequences or HGD sequence motifs. Applicants only describe SEQ ID NO: 1 a 575 bp fragment isolated from *Brassica napus* using *Arabidopsis* specific HGD primers and incorporate through reference HGD encoding sequences from human, mouse and *Arabidopsis*. Furthermore, Applicants fail to describe structural features common to members of the claimed genus of HGD encoding polynucleotides. Hence, Applicants fail to meet either prong of the two-prong test set forth by *Eli Lilly*. Furthermore, given the lack of description of the necessary elements essential for HGD activity or those nucleic acid sequences that are anti-HGD sequences, it remains unclear what features identify HGD sequence motifs or anti-HGD homogentisate dioxygenase nucleic acid sequences. Since the genus of anti-HGD homogentisate dioxygenase nucleic acid sequences has not been described by specific structural features, the specification fails to provide an adequate written description to support the breath of the claims.

Claims 1-2 and 6-16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a vector encompassing an expression cassette comprising an antisense homogentisate dioxygenase nucleic acid sequence of SEQ ID NO: 1 operably linked to a plant specific promoter or the 35S promoter and a OCS terminator, and a microorganism and transformed plant comprising said vector, and a method for generating transformed *Brassica napus* plants therewith, does not reasonably provide enablement for a vector encompassing an expression cassette comprising any anti-HGD homogentisate dioxygenase nucleic acid sequence operably linked to a plant specific promoter or the 35S promoter and a OCS terminator other than a vector comprising the antisense sequence of SEQ ID NO: 1; or any method of making any transformed plant using any anti-HGD sequence other than a method making a transformed *Brassica napus* plant using a vector comprising the antisense sequence of SEQ ID NO: 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claimed invention is not supported by an enabling disclosure taking into account the *Wands* factors. *In re Wands*, 858/F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988). *In re Wands* lists a number of factors for determining whether or not undue experimentation would be required by one skilled in the art to make and/or use the invention. These factors are: the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples of the invention, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claim.

The claims are broadly drawn to a vector encompassing an expression cassette comprising an anti-HGD homogentisate dioxygenase nucleic acid sequence operably linked to a plant specific promoter or the 35S promoter, a microorganism comprising a vector encompassing an expression cassette comprising an anti-HGD homogentisate dioxygenase nucleic acid sequence, plants transformed with either the said vector or said microorganism comprising the said vector; and a method of transformation using said anti-HGD homogentisate dioxygenase nucleic acid sequence.

Applicant teaches transformation of *Brassica napus* with a vector comprising SEQ ID NO: 1, an antisense fragment isolated from *Brassica napus* cDNA library using PCR primers derived from an *Arabidopsis* HGD encoding polynucleotide sequence (pages 15-20 of the specification).

Applicant does not teach expression cassettes, vectors or plants comprising anti-HGD homogentisate dioxygenase nucleic acid sequences or HGD sequence motifs other than the antisense sequence of SEQ ID NO: 1 for generating transformed *Brassica napus* plants.

The state-of-the-art is such that one of skill in the art cannot predict which unspecified anti-HGD homogentisate dioxygenase nucleic acid sequences in sense or antisense orientation or what other types of on-exemplified anti-HGD sequences comprising unspecified polynucleotide (having an HGD motif or not) would be capable of inhibiting homogentisate dioxygenase activity when expressed in a plant because most binding sites that are vulnerable to an antisense sequence, including ribozymes and external guide sequences are inaccessible (Branch *et al.* TIBS, vol. 23, Feb. 1998, pp. 45-50; page 49 column 2 lines 26-34), and thus the power of discrimination of an antisense fragment is unpredictable. Branch *et al.* sums up the challenges

and unpredictability to finding effective antisense molecules. Branch teaches while antisense strategies look easy on paper, they are far more difficult to produce than was originally anticipated, and their ability to eliminate the function of a single gene has never been proven due to unexpected non-antisense effects and blocked internal structures rendering most potential binding sites inaccessible to antisense molecules (*ibid.* p. 45). Thus, absent clear and specific information in the specification regarding the identity and structure of each anti-HGD nucleic acid sequence encompassed by the claims; and that each anti-HGD sequence would play a role in homogentisate dioxygenase activity, one skilled in the art would not be able to make anti-HGD nucleic acid sequences with predictability. Similarly, not only for antisense, ribozymes, and external guide sequences, but the category of anti-HGD sequences also comprises sense co-suppression of gene expression which is also dependent upon a high degree or at least a recognizable degree of sequence identity or homology between transgene and target sequence (Waterhouse P. *et al.*, Trends in Plant Sciences, November 1999, Vol. 4, No. 11 pp. 452-457; page 453 column 1 lines 32-40).

Given the lack of guidance in the instant specification, undue trial and error experimentation would be required for one of ordinary skill in the art to screen through the multitude of non-exemplified antisense or sense sequences, ribozymes or external guide sequences, either by testing non-exemplified fragments of SEQ ID NO: 1 or any other UDP-glucose dehydrogenase in sense or antisense orientation; or screening through the non-exemplified antisense RNA, non-exemplified ribozymes, or non-exemplified external guide sequences by producing transformation vectors and transforming plants therewith, in order to

identify those anti-HGD nucleic acid molecules that when expressed in a plant would be useful for inhibiting the activity of homogentisate dioxygenase when expressed in a plant.

Therefore, given the breadth of the claims; the lack of guidance and working examples; the unpredictability in the art; and the state-of-the-art as discussed above, undue experimentation would be required to practice the claimed invention, and therefore the invention is not enabled throughout the broad scope of the claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 11-13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the homogentisate (HGD) activity" in line of section (b). There is insufficient antecedent basis for this limitation in the claim.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd.

App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, Claim 11 recites the broad recitation "from the genus *Agrobacterium*", and the claim also recites "and in particular the species *Agrobacterium tumefaciens*" which is the narrower statement of the range/limitation.

Claims 12 and 13 provide for the use of a vector, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 12 and 13 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Regarding Claim 15, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 6-7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fernandez-Canon J. *et al.* The Journal of Biological Chemistry, 8 September 1995, Vol. 270, No. 36; pp. 21199-21205.

The claims are broadly drawn to a vector encompassing an expression cassette comprising an antisense homogentisate dioxygenase nucleic acid sequence having a HGD motif operably linked to a plant specific promoter or the 35S promoter, a microorganism comprising a vector encompassing an expression cassette comprising an antisense homogentisate dioxygenase nucleic acid sequence having a HGD motif, plants transformed with either the said vector or said microorganism comprising the said vector; and a method of transformation using said HGD nucleic acid sequence; wherein the office interprets a homogentisate dioxygenase (HGD) sequence motif in accordance with SEQ ID NO: 1 (a homogentisate dioxygenase nucleic acid sequence from *Brassica napus*) of Claim 6 as any HGD encoding nucleic acid sequence because any HGD encoding nucleic acid sequence would comprise a HGD sequence motif in accordance with SEQ ID NO: 1 and the cress plant of Claim 15 to encompass any cress plant species.

Fernandez teaches a cloning/expression vector cassette (pGEX-2T) comprising an antisense HGD nucleic acid sequence (hmgA from *Aspergillus nidulans*) designated as pGEX::AGMH transformed into *E. coli* on page 21202; beginning in column 1, line 5 to column 2, line 12, and thus the reference teaches all the limitations of Claims 1-2, 6-7 and 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2 and 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernandez-Canon J. *et al.* The Journal of Biological Chemistry, 8 September 1995, Vol. 270, No. 36; pp. 21199-21205 in view of Tsegaye Y. *et al.* American Society of Plant Biologists, Annual Meeting Conference Abstracts; 1999, July 24 – July 28; See Transgenics and Biotechnology section, Abstract #413 and in further view of Applicant's admission of the prior art.

The claims are broadly drawn to a vector encompassing an expression cassette comprising an antisense homogentisate dioxygenase nucleic acid sequence having a HGD motif operably linked to a plant specific promoter or the 35S promoter, a microorganism comprising a vector encompassing an expression cassette comprising an antisense homogentisate dioxygenase nucleic acid sequence having a HGD motif, plants transformed with either the said vector or said microorganism comprising the said vector; and a method of transformation using said HGD nucleic acid sequence; wherein the office interprets a homogentisate dioxygenase (HGD) sequence motif in accordance with SEQ ID NO: 1 (a homogentisate dioxygenase nucleic acid sequence from *Brassica napus*) of Claim 6 as any HGD encoding nucleic acid sequence because any HGD encoding nucleic acid sequence would comprise a HGD sequence motif in accordance with SEQ ID NO: 1 and the cress plant of Claim 15 to encompass any cress plant species.

Fernandez teaches a recombinant cloning/expression vector cassette (pGEX-2T) comprising an antisense HGD nucleic acid sequence (*hmgA* from *A. nidulans*) designated as pGEX::AGMH transformed into *E. coli* on page 21202; beginning in column 1, line 5 to column 2, line 12, and thus the reference teaches all the limitations of Claims 1-2, 6-7 and 10.

Fernandez does not teach a recombinant vector comprising a 35S or plant specific promoter and an OCS terminator functionally linked to an anti-HGD nucleic acid and a host microorganism comprising said recombinant vector; a plant transformed with said vector or said host microorganism comprising said recombinant vector, and a method of transforming a plant with either the vector or the host microorganism comprising the vector.

Tsegaye teaches transformation of *Arabidopsis* (i.e. Thale cress, a cress species) with a recombinant vector construct comprising either a plant specific seed promoter DC3 or a 35S promoter operably linked to an antisense homogentisate dioxygenase cDNA (HGA-dioxygenase) from *Arabidopsis* that encompasses a homogentisate dioxygenase (HGD) sequence motif in accordance with SEQ ID NO: 1 in antisense orientation.

Applicant's specification teaches that the prior art discloses polynucleotide sequences encoding homogentisate dioxygenase enzymes from human, mouse and *Arabidopsis* (page 15 lines 41-44 of the specification); transformation methods comprising *Agrobacterium tumefaciens* meditated transformation and a biolistic plant transformation (in the specification, end of page 12 to middle of page 13); the 35S promoter and OCS terminator (specification page 18 lines 26-31); the legumin B promoter (specification page 17 lines 11-13); and a method of transforming *Brassica napus* using *Agrobacterium tumefaciens* (specification, in Example 5 pages 19-20).

It would have been obvious at the time of invention to modify the bacterial anti-HGD expression cassette of Fernandez to substitute a 35S promoter or plant specific promoter and an OCS terminator for *Agrobacterium tumefaciens* mediated transformation of *Arabidopsis* to express an anti-HGD in a plant. One of ordinary skill in the art would have been motivated by the knowledge common in the art that an anti-HGD expression construct operably linked to the

35S promoter or a seed specific DC3 promoter are valuable materials for studying tocopherol production in plants and for genetically engineering plants to have greater tocopherol biosynthesis as taught by Tsegaye, and that *Agrobacterium* mediated transformation as taught by Applicants specification is easily applied to a wide range of plants including *Arabidopsis*, and that one would have had a reasonable expectation of success of transforming *Arabidopsis* and selecting for transformed plants, plant cells, and tissues in view of the success of Tsegaye.

All Claims are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kallis whose telephone number is (571) 272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (571) 272-0804. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Russell Kallis

Russell Kallis Ph.D.
December 18, 2004